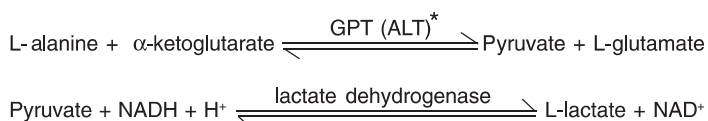


## INTRODUCTION

- Infinite** Liquid GPT (ALT) is a reagent set for determination of GPT (ALT) activity in serum and plasma based on **UV - Kinetic method**.
- Infinite** Liquid GPT (ALT) is a **ready-to-use**, two liquid reagent system.
- Infinite** Liquid GPT (ALT) estimates GPT (ALT) activity in just **2½ minutes**.
- Infinite** Liquid GPT (ALT) is **linear** upto 600 IU/l.
- Infinite** Liquid GPT (ALT) can be used on any **Spectrophotometer, Discrete semiautomated and Automated analyzers**. Programme can be designed for any specific analyzer upon request.
- Infinite** Liquid GPT (ALT) is **stable till expiry** at 2 - 8°C.

## PRINCIPLE

$\alpha$ -ketoglutarate reacts with L-alanine in presence of GPT (ALT) to form pyruvate and L-glutamate. The increase in pyruvate is determined in an indicator reaction catalyzed by lactate dehydrogenase. The conversion of NADH to NAD<sup>+</sup> at 340 nm, is proportional to the activity of GPT (ALT) in serum/plasma and is determined kinetically as rate of decrease in absorbance.



\*Abbreviations

ALT = Alanine transaminase

GPT = Glutamate pyruvate transaminase

## PREPARATION OF WORKING SOLUTION

Prepare working solution by mixing **Reagent R<sub>1</sub>** and **Reagent R<sub>2</sub>** in the ratio 4 : 1 as per requirement.

## REAGENT STORAGE STABILITY

The reagent kit should be stored at 2 - 8°C and is stable till the expiry date indicated on the label.

R<sub>1</sub> and R<sub>2</sub> reagents are stable till expiry at 2 - 8°C.

The working solution (4 R<sub>1</sub> + 1 R<sub>2</sub>) is stable for 30 days at 2 - 8°C.

## COMPONENTS & CONCENTRATION OF WORKING SOLUTION

Component	Concentration
• Tris buffer, pH 7.4	80 mmol/l
• L-alanine	500 mmol/l
• Lactate dehydrogenase	≥ 3000 IU/l
• NADH	0.23 mmol/l
• $\alpha$ -ketoglutarate	10 mmol/l

## SPECIMEN COLLECTION & PRESERVATION

Blood should be collected in a clean dry container. Although serum is preferred, plasma with heparin or EDTA can be used. Samples with any visible haemolysis are not acceptable. GPT (ALT) activity in serum/plasma is stable for 1 week at 2 - 8°C and 1 month at -20°C. The samples should be brought to room temperature prior to use.

## PROCEDURE

- ☐ Reaction type ..... UV - Kinetic
- ☐ Reaction direction ..... Decreasing
- ☐ Wavelength ..... 340 nm.
- ☐ Flowcell temperature ..... 37°C
- ☐ Zero setting with ..... Distilled water
- ☐ Delay time ..... 60 seconds
- ☐ No. of readings ..... 4
- ☐ Interval ..... 30 seconds
- ☐ Blank absorbance limit ..... ≥ 0.900 Abs.
- ☐ Sample volume ..... 0.05 ml (50 µl)
- ☐ Working solution volume (4 R<sub>1</sub> : 1 R<sub>2</sub>) ..... 1.0 ml (1000 µl)
- ☐ Factor ..... 3339
- ☐ Linearity ..... 600 IU/l

## MANUAL ASSAY PROCEDURE

Prewarm at 37°C the required amount of working solution before use. Perform the assay as given below :

### 1.0 ml procedure

Serum / plasma ..... 0.05 ml

Working solution ..... 1.0 ml (800 µl R<sub>1</sub> + 200 µl R<sub>2</sub>)

Mix thoroughly and transfer the assay mixture immediately to the thermostated cuvette and start the stop watch simultaneously. Record the first reading at 60<sup>th</sup> second and subsequently three more readings with 30 seconds interval at 340 nm.

### Calculation:

Calculate the change in absorbance per minute.

( $\Delta$  Abs./30 seconds x 2)

Activity of GPT (ALT) in IU/l =  $\Delta$  Abs./min x 3339

### Conversion factors :

Following factors can be used for conversion of IU/l from one temperature to another :

#### Temperature Conversion

From 37°C to 30°C : 0.71

From 37°C to 25°C : 0.54

**Note :** Since temperature conversion factors are given only as an approximate conversion, it is suggested that values be reported at the temperature of measurement.

## EXPECTED VALUES

### Serum / Plasma

Temperature	at 25°C	at 30°C	at 37°C
<b>MEN</b>	≤ 22 IU/l	≤ 29 IU/l	≤ 41 IU/l
<b>WOMEN</b>	≤ 17 IU/l	≤ 22 IU/l	≤ 31 IU/l

Expected range varies from population to population. It is therefore recommended that each laboratory should establish its own normal range.

## PROCEDURE LIMITATIONS









1. If the GPT (ALT) activity exceeds 600 IU/l, dilute the specimen with normal saline and repeat the assay. The result obtained should then be multiplied with the dilution factor to obtain correct GPT (ALT) activity.
2. The working solution is considered unsatisfactory and should not be used if the absorbance is less than 0.900 at 340 nm. against distilled water.

## QUALITY CONTROL

To ensure adequate quality control, it is recommended that each batch should include normal and abnormal commercial reference control serum. It should be realized that the use of quality control material checks both instrument and reagent functions together. Factors which might affect the performance of this test include proper instrument function, temperature control, cleanliness of glassware and accuracy of pipetting.

## REFERENCES

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	In Vitro Diagnostic Use		Date of Manufacturing
	Consult Instructions for use		Use by (YYYY-MM-DD)
	Catalogue Number		Temperature Limitation
	Batch Code		Manufacturer



### European Conformity

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Plant : G-54, MIDC Tarapur, Boisar, Thane - 401 506, INDIA.



Liquid dispensing facility



# Infinite

GPT (ALT)  
UV-Kinetic